

Zika Virus Disease and Infection, Congenital

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Merlin reporting code = 06012 Zika Virus Disease and Infection, Congenital
Case report form (CRF): [Florida Confidential Vector-borne Disease Infection CRF](#)
MERLIN EXTENDED DATA REQUIRED

Background

Zika virus (ZIKV) is an emerging mosquito-borne virus that has spread rapidly across the Americas in 2015 and 2016. Only about 1 in 5 people infected with Zika virus are symptomatic and some patients may not have fever. ZIKV disease, dengue fever, and chikungunya fever are difficult to differentiate clinically. It is also important to note that co-infections with these viruses can occur. Subsequent investigations have demonstrated vertical transmission of ZIKV to the fetus in pregnant women. These in utero infections have been associated with the potential for devastating outcomes including microcephaly, other central nervous system abnormalities, and spontaneous abortions. There is also an association with ZIKV infection and post-infection Guillain-Barré syndrome (GBS).

Clinical criteria for diagnosis

Liveborn infant with congenital microcephaly, or intracranial calcifications, or structural brain or eye abnormalities, or other congenital central nervous system-related abnormalities not explained by another etiology.

Laboratory criteria for diagnosis

Confirmatory:

- Detection of ZIKV by culture, viral antigen, or viral RNA in fetal tissue, umbilical cord blood, amniotic fluid, neonatal serum, cerebrospinal fluid (CSF), or urine collected within 2 days of birth or later if perinatal infection has been ruled out

OR

- All of the following:
 - Positive enzyme immunosorbent assay (EIA) or immunofluorescent assay (IFA) test for ZIKV IgM antibodies in umbilical cord blood, neonatal serum, or CSF collected within 2 days of birth or later if perinatal infection has been ruled out, **and**
 - Positive neutralizing antibody titers by plaque reduction neutralization test (PRNT) against ZIKV, **and**
 - Negative neutralizing antibody titers by PRNT against dengue virus (DENV) or other flaviviruses endemic to the region where exposure occurred.

Presumptive:

- Both of the following:
 - Positive, equivocal, or indeterminate EIA or IFA test for ZIKV IgM antibodies in serum or CSF collected within 2 days of birth or later if perinatal infection has been ruled out **and**
 - Positive neutralizing antibody titers by PRNT against ZIKV.

OR

- All of the following:
 - Positive, equivocal, or indeterminate EIA or IFA test for ZIKV IgM antibodies in serum or CSF, **and**
 - Negative or equivocal for DENV IgM antibodies or IgM antibodies to other flaviviruses endemic to the region where the exposure occurred, **and**
 - No PRNT performed.

Supportive:

- Positive EIA or IFA test for ZIKV IgM antibodies in serum or CSF
- OR
- Positive neutralizing antibody titers by PRNT against ZIKV.

Epidemiological criteria for diagnosis

One or more of the following for mother:

- Resides in or recent travel to an area with known ZIKV transmission, or
- Sexual contact with a confirmed or probable case of ZIKV infection or person with recent travel to an area with known ZIKV transmission, or
- Receipt of blood or blood products within 30 days of symptom onset, or
- Receipt of organ or tissue transplant within 30 days of symptom onset, or
- Association in time and place with a confirmed or probable case, or
- Likely vector exposure in an area with suitable seasonal and ecological conditions for potential local vectorborne transmission.

Case classificationConfirmed:*Zika virus disease:*

A clinically compatible congenital disease in a neonate with confirmatory laboratory evidence.

Zika virus infection:

A neonate with confirmatory laboratory evidence.

Probable:*Zika virus disease:*

A clinically compatible congenital disease in a neonate with presumptive laboratory evidence whose mother meets the epidemiologic criteria.

Zika virus infection:

A neonate with presumptive laboratory evidence whose mother meets the epidemiologic criteria.

Suspect:*Zika virus disease:*

A clinically compatible congenital disease in a neonate with supportive laboratory evidence whose mother meets the epidemiologic criteria.

Zika virus infection:

A neonate with supportive laboratory evidence whose mother meets the epidemiologic criteria.

Comments

As part of the complete evaluation of congenital microcephaly or other CNS birth defects, testing for other congenital infections such as syphilis, toxoplasmosis, rubella, cytomegalovirus infection, lymphocytic choriomeningitis virus infection, and herpes simplex virus infections should be considered. An assessment of potential genetic and other teratogenic causes of the congenital anomalies should also be performed.

Cross-reaction with related flaviviruses (e.g., dengue, West Nile, yellow fever, Japanese encephalitis viruses) on serological tests is common and results may be difficult to interpret. Due to this cross-reactivity, it is important to ask if there has been any lifetime travel by the mother to a flavivirus-endemic

country or vaccination for yellow fever or Japanese encephalitis viruses. In addition, people with dengue infection often test positive for ZIKV IgM.

Samples from infants with possible congenital infections should be sent to BPHL.